

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 August 2002 (08.08.2002)

PCT

(10) International Publication Number
WO 02/061334 A1

(51) International Patent Classification⁷: **F21V 33/00**,
F21S 8/00, G09F 13/14, A47G 1/06

(21) International Application Number: PCT/PL01/00063

(22) International Filing Date: 20 July 2001 (20.07.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
W.111861 2 February 2001 (02.02.2001) PL

(71) Applicant and

(72) Inventor: **GIERLOWSKI, Grzegorz** [PL/PL]; ul.
Baczynskiego 98, PL-91-170 Lodz (PL).

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG).

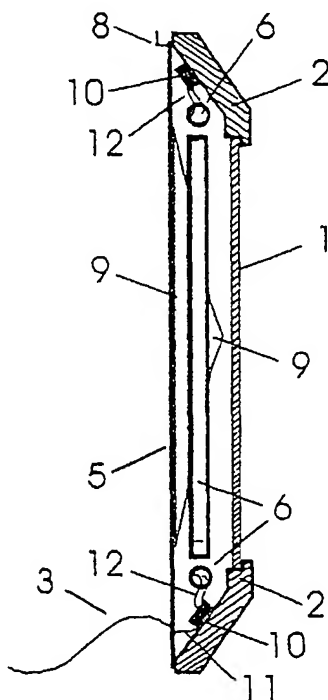
Published:

— with international search report

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: BACKLIT ART PICTURE



(57) Abstract: Backlit Art Picture is a new self-contained product that creates new method of displaying translucent artworks for interior decoration and lighting. It makes possible to display backlit translucent artworks like stained glass panels, glass and foil or silk paintings and prints, photography and other non-flat artworks (relief) in home and office interiors on any wall without previous necessity of window placement or wall niche cutting for backlight. It also makes possible for the user to define and choose backlight version proper to any artwork or to his liking. It creates few artwork versions in one depending direction from which light backlights the artwork. One of preferred embodiments backlights the artwork and shines sideways at the same time to create light contour effect for more room lighting function. Backlit Art Picture having an ornamented frame (2) supporting the translucent artwork (1) and shaped to form a non-transparent flat backlight compartment behind the artwork, one or several tubular light sources (6) placed behind the artwork inside the frame and arranged centrally or at its sides parallel to the edges of the frame, light reflecting plates (9 or 15) shaped according to light sources arrangement for directing the light where it is needed the most inside and/or outside the unit, one or several electronic starting/powering devices (10) for tubular light sources, power and low voltage connecting cable (3 or 11 and 13), on/off switches (4 or 28) at bottom sides of the frame for the user to choose backlight version, a hanger (8) to mount Backlit Art Picture on the wall or to the ceiling and closing lid (5) mounted to the back side of the frame for light sources replacement.

WO 02/061334 A1

AL

BACKLIT ART PICTURE

Backlit Art Picture is a new self-contained product that creates new method of displaying translucent artworks for interior decoration and lighting. It makes possible to display backlit translucent artworks like stained glass panels, glass and foil or silk paintings and prints, photography and other non-flat artworks (relief) in home and office interiors on any wall without previous necessity of window placement or wall niche cutting for backlight. It also makes possible for the user to define and choose backlight version proper to any artwork or to his liking. It creates few artwork versions in one depending directions from which the light backlights the artwork.

Subject of this invention is shown on sixteen drawings which are incorporated in and constitute a part of the specification, illustrate presently preferred embodiments and together with this detailed description, abstract and nine claims serve to explain the principles of this invention; and of which:

- Fig. 1 shows side view of Backlit Art Picture depicting its general idea,
- Fig. 2 shows cross section view of Backlit Art Picture depicting its general idea,
- Fig. 3 shows its front view of Backlit Art Picture depicting its general idea,
- Fig. 4 shows its back side view of Backlit Art Picture depicting its general idea,
- Fig. 5 shows side view of first preferred embodiment described in claim 2,
- Fig. 6 shows side section view of first preferred embodiment described in claim 2,
- Fig. 7 shows front view of first preferred embodiment described in claim 2,
- Fig. 8 shows its cross-side section view depicting insides of back side without back closing lid of Backlit Art Picture first preferred embodiment described in claim 2,
- Fig. 9 shows side section view of second preferred embodiment described in claim 3,
- Fig. 10 shows front view of third preferred embodiment with light effect (20) it creates on the wall and which is described in claim 4,
- Fig. 11 shows side section view of third preferred embodiment described in claim 4,
- Fig. 12 shows side view of fourth preferred embodiment described in claim 8,
- Fig. 13 shows side section view of fourth preferred embodiment described in claim 8,
- Fig. 14 shows side section view of fifth preferred embodiment described in claim 9,
- Fig. 15 shows side section view of sixth preferred embodiment described in claim 6,
- Fig. 16 shows side section view of seventh preferred embodiment described in claim 7.

List of Backlit Art Picture invention components shown on above mentioned drawings that are numbered is:

- 1. artwork; 2. frame; 3. power cable; 4. electric on/off switch; 5. back closing lid;
- 6. tubular fluorescent light source, straight or that might be bent to form different shapes;
- 7. hanger for wall mounting; 8. hanger for wall or ceiling mounting; 9. light reflecting structure shaped as shown on drawings and described in claims; 10. electric or electronic circuit device to drive (start and power) the tubular light sources; 11. inner power connecting cables; 12. low voltage connecting cables to power light sources;

13. translucent part of back closing lid; 14. light-rays directions; 15. bowl-shaped light reflecting structure; 16. distancing mount; 17. light dispersing panel; 18. a hole in the frames filled with translucent material plate; 19. the wall on which Backlit Art Picture is mounted;
20. light aureole formed on the wall by third preferred embodiment described in claim 4;
21. screws adjoining two backside mounted frames in fourth preferred embodiment described in claim 8; 22. a diamond-shaped reflecting structure in fourth preferred embodiment described in claim 8;
23. screw-holding opening in outer surfaces of the frames in fourth preferred embodiment;
24. translucent part of V-shaped light reflecting structure in fifth preferred embodiment described in claim 9; 25. a nail-like bolt to mount Backlit Art Picture onto the wall; 26. a frame made of translucent material; 27. batteries compartment with possible optional recharging system in seventh preferred embodiment described in claim 7.

Backlit Art Picture creating a new medium for displaying all kinds of translucent artworks independently of windows or specially cut in wall backlight niches is also thus creating a new medium for human artistic creativity when artworks will be made of few adjoined layers of

translucent material with several surfaces comprising front artwork shown on drawings, to paint, or print on or carve with, for more three dimensional artistic effects. Created by this new invention possibility of several directions of backlight makes artworks made for it newer

and more interesting than before for users giving them interactive possibilities, thus for artists to create having it in mind as well. This invention by combining decorative and interior lighting functions can also popularize famous artworks of great old masters of conventional painting by reproducing them lawfully in their translucent version.

A backlit art picture significant of comprising: a translucent artwork (1); an ornamented frame (2) supporting the artwork; a non-transparent backlight compartment attached to the back side of the frame and closed with removable lid (5) and inside which a set of tubular light sources is placed parallel to the edges at the sides of the frame inside backlight compartment; a set of two single or double on/off switches (4) to control each light source separately for user to modify backlight directions important to the artwork; a power connecting cable (3); and a set of hangers (7 and 8) for backlit art picture to be mounted on the wall or to the ceiling. This demonstrates general idea of this invention.

A backlit art picture significant of comprising: a translucent artwork (1); an ornamented frame (2) supporting the artwork and which is shaped in its cross-side section view to form inside the frame a space of a non-transparent flat backlight compartment behind the artwork; a set of four tubular light sources (6) positioned inside the frame each at opposite sides parallel to the edges of the frame and close to inner edges of the frame, mounted to the frame with tubular light sockets that supply power; a light reflecting pyramid-shaped structure (9) with four integrated triangular surfaces that is positioned

centrally to the artwork and is pointing towards the artwork reflecting light towards the central part of the artwork and is mounted to the closing lid (5); a set of four electric or electronic devices (10) starting and powering tubular light sources, mounted to the frame aside light rays directions backlighting the artwork; a set of two double electrical on/off switches (4) mounted in the holes within the opposite sides of the frame in its lower part, each switch to control one light source for the user to choose up to 15 backlight direction versions proper to the artwork or to his liking; a power connecting cable (3); a set of inner power cables (11) supplying power to electronic devices; a set of low voltage power cables (13) connecting light sources to the starting/powering light sources devices; a removable backside non-transparent closing lid (5) mounted to the frame; a hanger (8) to mount backlit art picture to the wall or to the ceiling.

A backlit art picture according to claim 2, wherein a frame (2) is made of translucent material; and light sources controlling devices (10) are placed in the empty space inside pyramid-shaped reflecting structure (9), being mounted to the closing lid (5). This is for more interior lighting functions of this invention.

A backlit art picture according to claim 2, wherein closing lid (5) is made of translucent material therefore in parts not covered by reflecting structure (9) will let the light through onto the wall; a frame (2) has narrow holes along its all sides filled with translucent material plates (16) to let the light through onto the wall at every direction to form light aureole around backlit art picture; the light sources controlling devices (10) are placed in the empty space inside the reflecting structure (9) being mounted to the closing lid (5).

A backlit art picture according to claim 3 and claim 4, wherein all mentioned there significant features of these claims are combined together to create all-sides light-emitting backlit art picture for outmost interior lighting function.

A backlit art picture according to claim 2 wherein the white thin translucent light dispersing panel is mounted behind the artwork and between the artwork and light source; the only one tubular light source or tubular round-shaped or near-rectangular-shaped light source used for backlighting is positioned centrally to the artwork surface and parallel to artwork edges or longer dimension in case of oval artworks and mounted to the inner surface of removable closing lid (5); a light reflecting bowl-shaped structure (15) of which inner surfaces are light-reflective that is round or oval or rectangular accordingly to artwork shape and that is positioned centrally to both the artwork and light source, with opening facing the artwork and bottom positioned behind the light source and that is mounted to the removable closing lid to ease light source replacement; and the light source starting/powering device (10) that is placed outside the light reflecting structure. This constitutes the popular, non-expensive version of Backlit Art Picture.

A backlit art picture according to claim 6 wherein light source is powered by appropriate number of batteries having together proper voltage and amperage to the light source used and which batteries are placed in batteries-compartment (27) with optional recharging system that is positioned within the inner space created by the frame and

closing lid but outside the bowl-shaped light reflecting structure, being mounted to the frame and with opening to the outside of whole unit to ease batteries replacement. This applied to smaller sized Backlit Art Pictures can be ideal also for gift industry.

A backlit art picture significant of comprising: a set of two translucent artworks (1) placed parallel at opposite sides of the unit in the supporting frames respectively; two ornamented supporting the artworks frames (2) each of similar cross-side section view as in claim 1 and both of identical dimensions which are joined together back to back with screws without closing lids to form a backlight compartment inside; a set of tubular light sources (6) mounted to the inside of one frame to be distanced equally from both artworks after joining together both frames and parallel to the edges of both frames; a set of light reflecting V-shaped integrated plates (9) positioned inside both joined together frames behind the light sources near the edges of whole unit to reflect the light directing it towards the center of artworks and that are mounted to one of the frames; a diamond-shaped light reflecting structure (22) with outside reflecting surfaces of which two adjacent are angled from 14 to 20 degrees to each other depending the overall dimensions of whole unit and height to width ratio of given artworks, and that is positioned centrally to the artworks with its sharp-angled tops facing towards the artworks and that is mounted to the opposite inner sides of the frame to direct reflected light towards the central parts of both artworks; a set of starting/powering tubular light sources devices (10) appropriate in number to quantity of light sources used and that are placed behind the V-shaped reflecting plates and are mounted to the inside of one of the frames between its inner edges and V-shaped light reflecting integrated plates; an appropriate set of power and low voltage cables to supply the light sources with power; a set of hangers (8) that hold both back-adjoined frames by its lower parts and facilitate attaching whole unit to the ceiling. This positioned perpendicular to walls of high and narrow corridors or other high rooms can optically lower the ceiling.

A backlit art picture according to claim 8 wherein both back adjoined frames (2) have throughout holes at the ~~outer~~ sides filed with plates made of translucent material to create additional opening for light to come out of the unit also in other than mentioned in claim 8 directions for more lighting function of above mentioned interiors.

Additional advantages and modifications will readily occur to those skilled in the art, construction and technology. Therefore, the invention in its broader aspects is not limited to the specific details and proposed, representative embodiments shown and described herein. Accordingly, various modifications may be made without departing from the scope or spirit of the general inventive concept as defined by the appended claims and their equivalents.

CLAIMS

What is claimed is:

1. A backlit art picture significant of comprising: a translucent artwork (1); an ornamented frame (2) supporting the artwork; a non-transparent backlight compartment attached to the back side of the frame and closed with removable lid (5) and inside which a set of tubular light sources is placed parallel to the edges at the sides of the frame inside backlight compartment; a set of two single or double on/off switches (4) to control each light source separately for user to modify backlight directions important to the artwork; a power connecting cable (3); and a set of hangers (7 and 8) for backlit art picture to be mounted on the wall or to the ceiling.
2. A backlit art picture significant of comprising: a translucent artwork (1); an ornamented frame (2) supporting the artwork and which is shaped in its cross-side section view to form inside the frame a space of a non-transparent flat backlight compartment behind the artwork; a set of four tubular light sources (6) positioned inside the frame each at opposite sides parallel to the edges of the frame and close to inner edges of the frame, mounted to the frame with tubular light sockets that supply power; a light reflecting pyramid-shaped structure (9) with four integrated triangular surfaces that is positioned centrally to the artwork and is pointing towards the artwork reflecting light towards the central part of the artwork and is mounted to the closing lid (5); a set of four electric or electronic devices (10) starting and powering tubular light sources, mounted to the frame aside light rays directions backlighting the artwork; a set of two double electrical on/off switches (4) mounted in the holes within the opposite sides of the frame in its lower part, each switch to control one light source for the user to choose up to 15 backlight direction versions proper to the artwork or to his liking; a power connecting cable (3); a set of inner power cables (11) supplying power to electronic devices; a set of low voltage power cables (13) connecting light sources to the starting/powering light sources devices; a removable backside non-transparent closing lid (5) mounted to the frame; a hanger (8) to mount backlit art picture to the wall or to the ceiling.
3. A backlit art picture according to claim 2, wherein a frame (2) is made of translucent material; and light sources controlling devices (10) are placed in the empty space inside pyramid-shaped reflecting structure (9), being mounted to the closing lid (5).
4. A backlit art picture according to claim 2, wherein closing lid (5) is made of translucent material therefore in parts not covered by reflecting structure (9) will let the light through onto the wall; a frame (2) has narrow holes along its all sides filled with translucent material plates (16) to let the light through onto the wall at every direction to form light aureole around backlit art picture; the light sources controlling devices (10) are placed in the empty space inside the reflecting structure (9) being mounted to the closing lid (5).

5. A backlit art picture according to claim 3 and claim 4, wherein all mentioned there significant features of these claims are combined together to create all-sides light-emitting backlit art picture for more interior lighting function.
6. A backlit art picture according to claim 2 wherein the white thin translucent light dispersing panel is mounted behind the artwork and between the artwork and light source; the only one tubular light source or tubular round-shaped or near-rectangular-shaped light source used for backlighting is positioned centrally to the artwork surface and parallel to artwork edges or longer dimension in case of oval artworks and mounted to the inner surface of removable closing lid (5); a light reflecting bowl-shaped structure (15) of which inner surfaces are light-reflective that is round or oval or rectangular accordingly to artwork shape and that is positioned centrally to both the artwork and light source, with opening facing the artwork and bottom positioned behind the light source and that is mounted to the removable closing lid to ease light source replacement; and the light source starting/powering device (10) that is placed outside the light reflecting structure .
7. A backlit art picture according to claim 6 wherein light source is powered by appropriate number of batteries having together proper voltage and amperage to the light source used and which batteries are placed in batteries-compartment (27) with optional recharging system that is positioned within the inner space created by the frame and closing lid but outside the bowl-shaped light reflecting structure, being mounted to the frame and with opening to the outside of whole unit to ease batteries replacement.
8. A backlit art picture significant of comprising: a set of two translucent artworks (1) placed parallel at opposite sides of the unit in the supporting frames respectively; two ornamented supporting the artworks frames (2) each of similar cross-side section view as in claim 1 and both of identical dimensions which are joined together back to back with screws without closing lids to form a backlight compartment inside; a set of tubular light sources (6) mounted to the inside of one frame to be distanced equally from both artworks after joining together both frames and parallel to the edges of both frames; a set of light reflecting V-shaped integrated plates (9) positioned inside both joined together frames behind the light sources near the edges of whole unit to reflect the light directing it towards the center of artworks and that are mounted to one of the frames; a diamond-shaped light reflecting structure (22) with outside reflecting surfaces of which two adjacent are angled from 14 to 20 degrees to each other depending the overall dimensions of whole unit and height to width ratio of given artworks, and that is positioned centrally to the artworks with its sharp-angled tops facing towards the artworks and that is mounted to the opposite inner sides of the frame to direct reflected light towards the central parts of both artworks; a set of starting/powering tubular light sources devices (10) appropriate in number to quantity of light sources used and that are placed behind the V-shaped reflecting plates and are mounted to the inside of one of the frames between its inner edges and V-shaped light reflecting integrated plates; an appropriate set of power and low voltage cables to supply the

light sources with power; a set of hangers (8) that hold both back-adjoined frames by its lower parts and facilitate attaching whole unit to the ceiling.

9. A backlit art picture according to claim 8 wherein both back adjoined frames (2) have throughout holes at the outer sides filed with plates made of translucent material to create additional opening for light to come out of the unit also in other than mentioned in claim 8 directions for more interior lighting function.

fig. 1

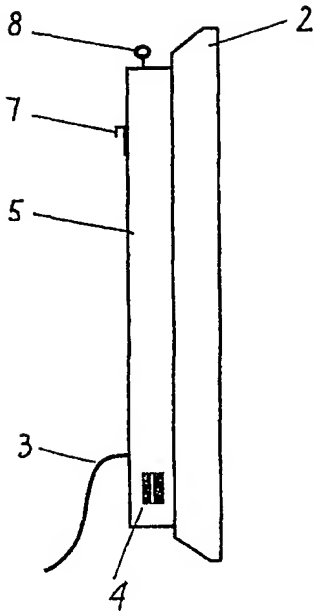


fig. 2

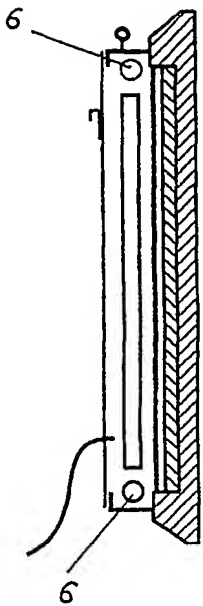


fig. 3

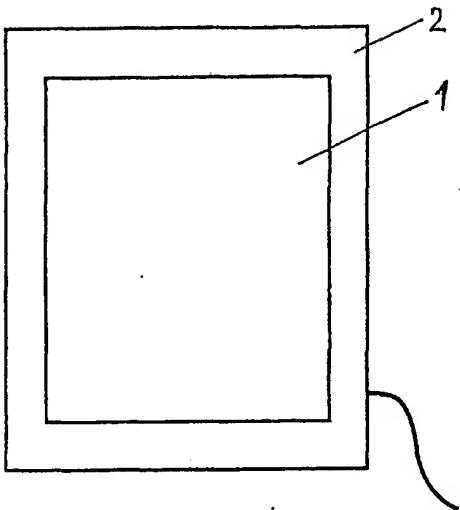


fig. 4

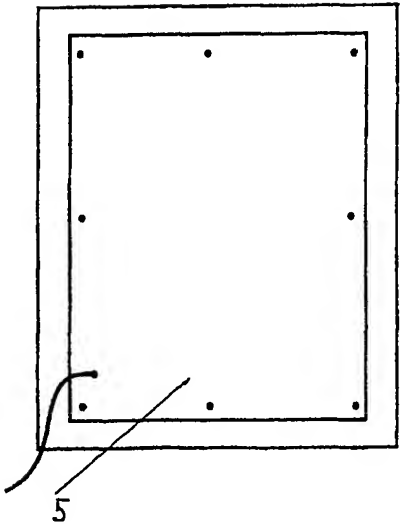


fig. 5

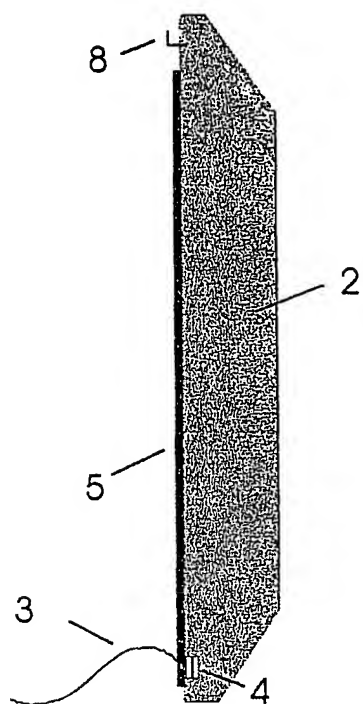


fig. 6

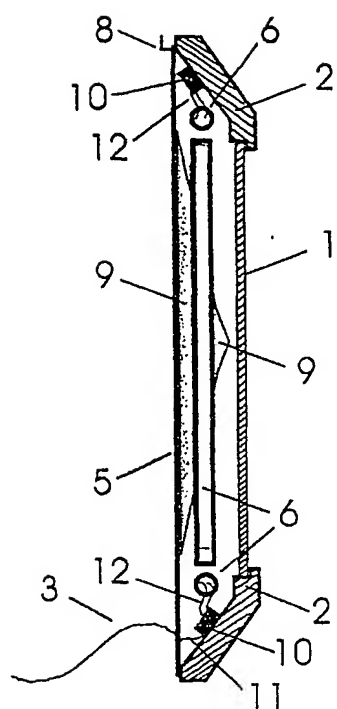


fig. 7

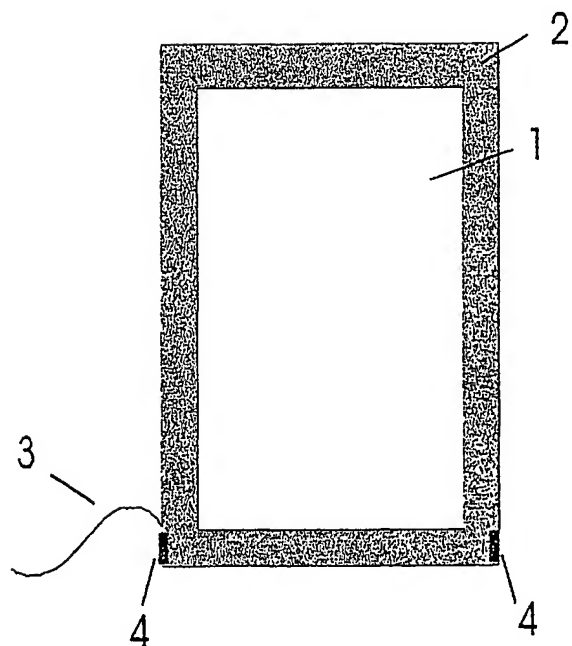


fig. 8

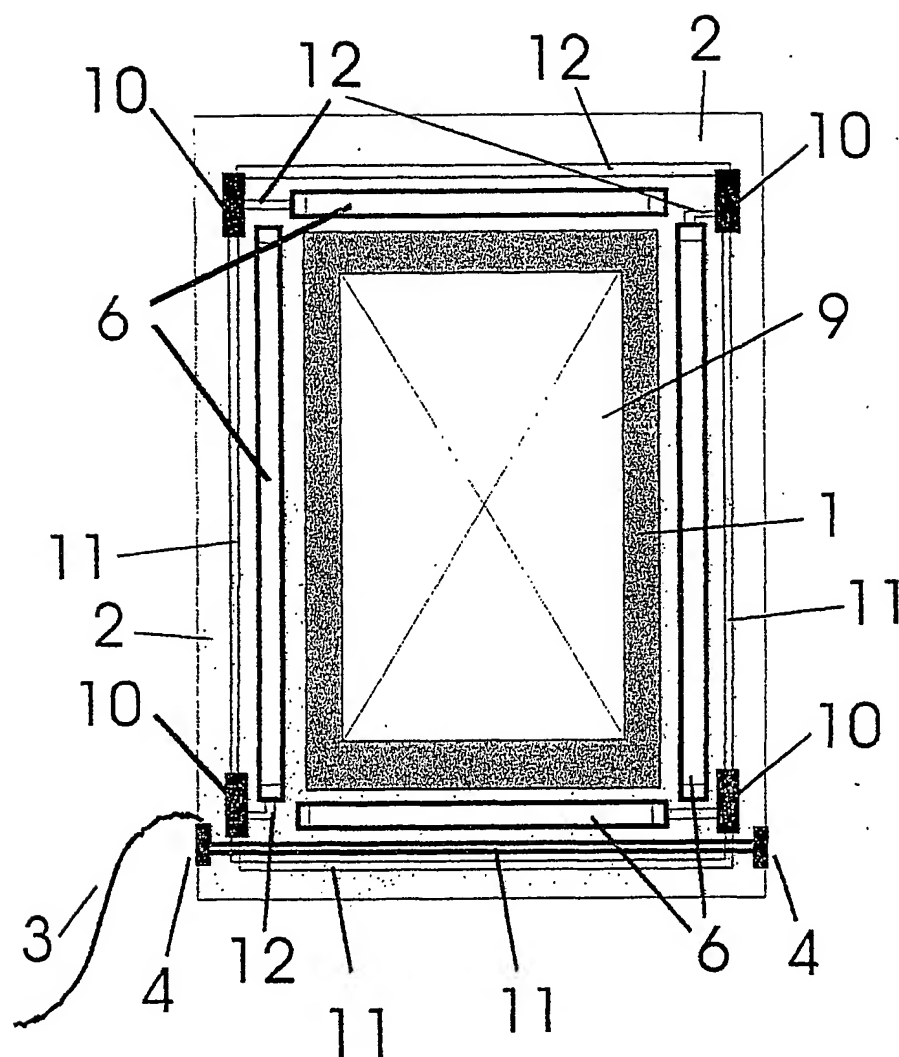


fig. 9

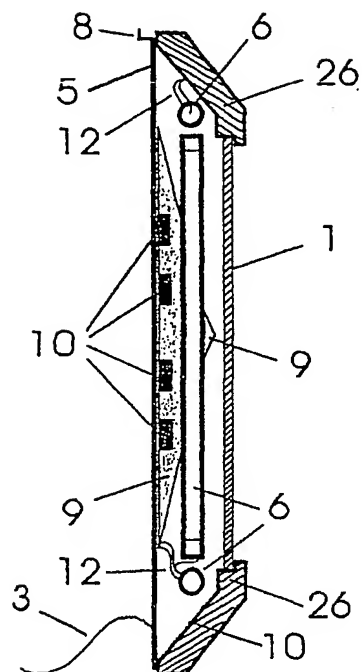


fig.10

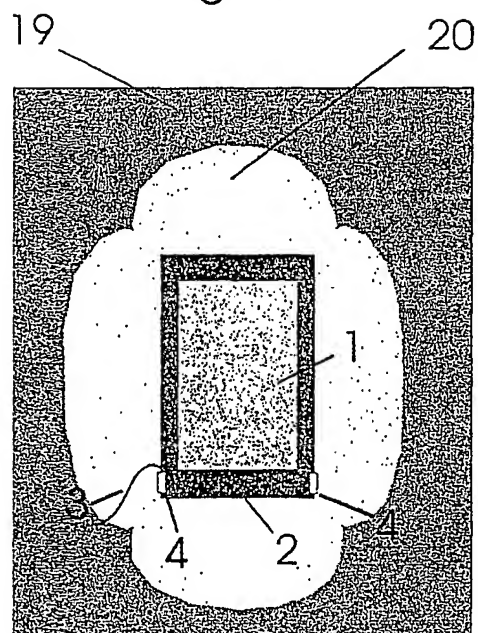


fig.11

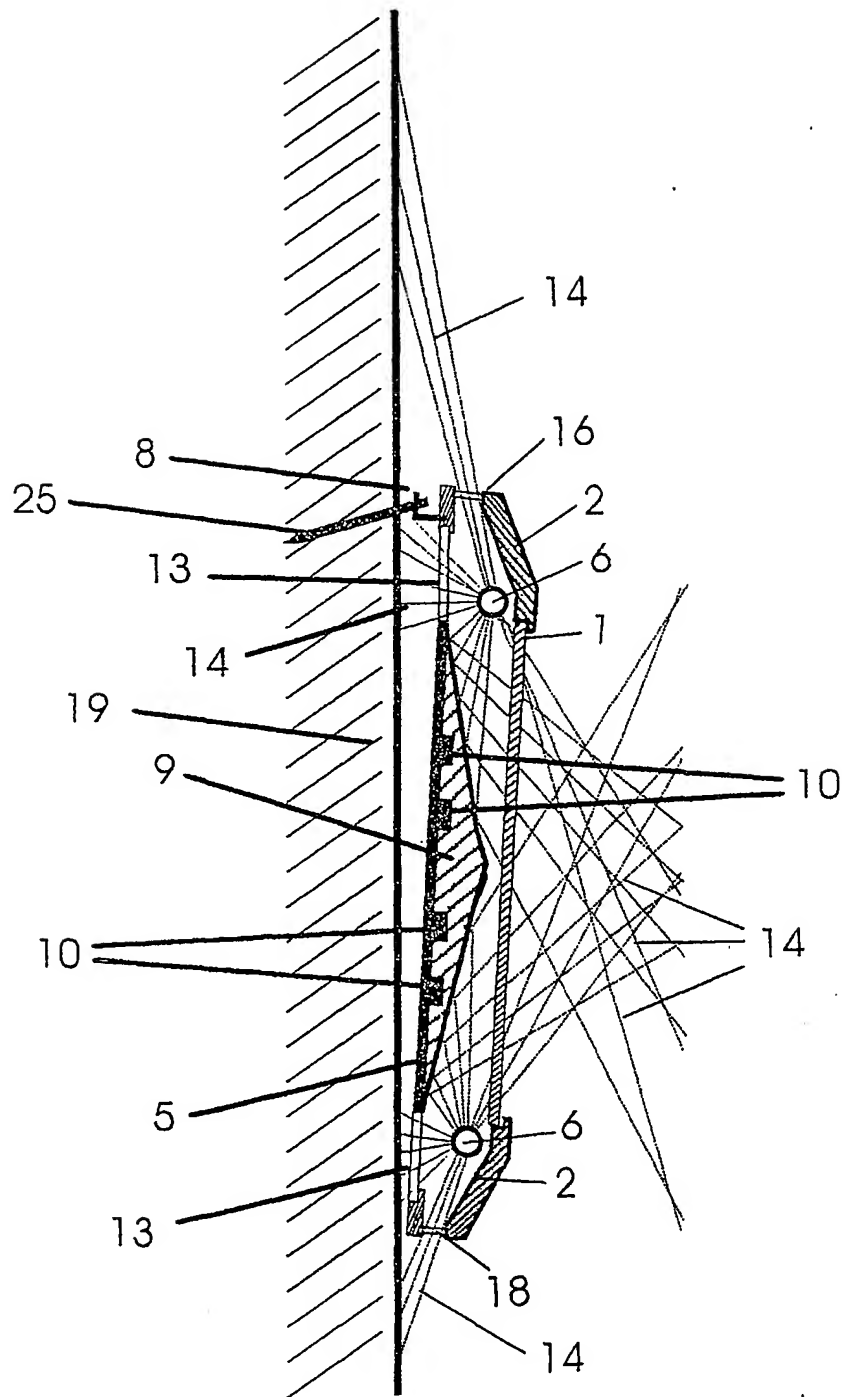


fig. 12

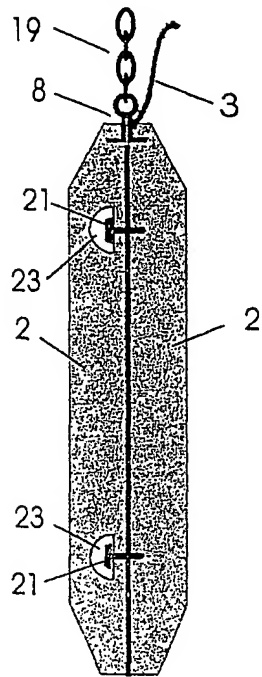


fig. 13

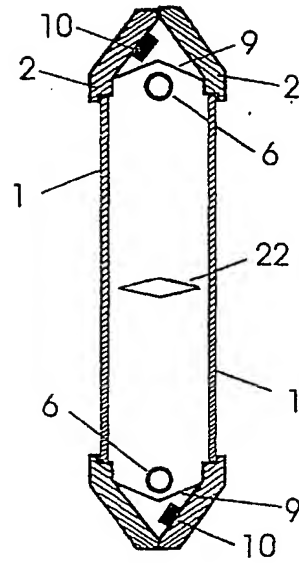


fig. 14

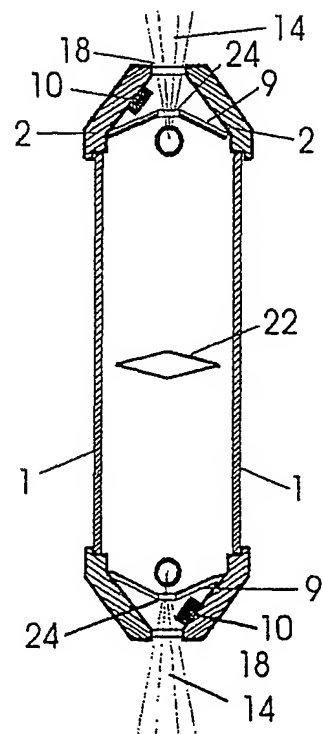


fig. 15

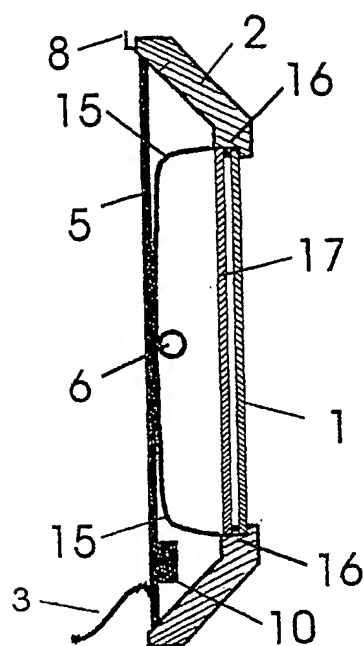
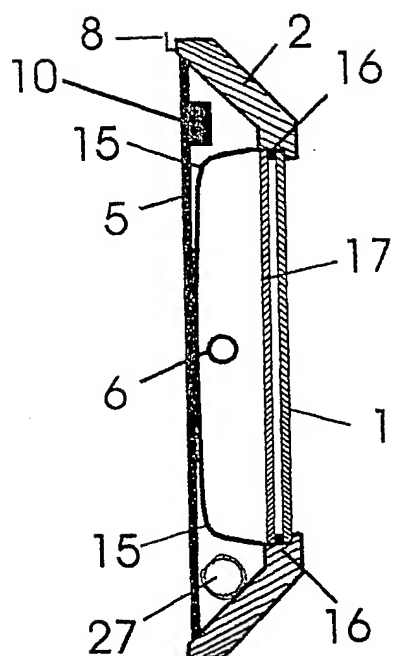


fig. 16



INTERNATIONAL SEARCH REPORT

International Application No
PCT/PL 01/00063

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F21V33/00 F21S8/00 G09F13/14 A47G1/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F21V F21S G09F A47G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 674 211 A (PRATT SHERWOOD L) 23 June 1987 (1987-06-23)	1
Y	column 2, line 10 - line 55 figures	2
Y	US 4 358 754 A (YOUNG RAYMOND R ET AL) 9 November 1982 (1982-11-09) column 3, line 25 - column 4, line 2 figures	2
A	US 5 523 930 A (FRITTS ROBERT W) 4 June 1996 (1996-06-04) column 6, line 43 - line 45 figures 1-4	3
A	FR 2 538 505 A (PELGAS CHRISTIAN) 29 June 1984 (1984-06-29) the whole document	3,4,8
	--- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

11 December 2001

Date of mailing of the international search report

18/12/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Clabaut, M

INTERNATIONAL SEARCH REPORT

Inter nal Application No

PCT/PL 01/00063

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2 529 713 A (GERALD THURSTON) 14 November 1950 (1950-11-14) the whole document ---	4
A	EP 0 375 293 A (TAMA DENKI KOGYO KABUSHIKI KAI) 27 June 1990 (1990-06-27) column 4, line 48 -column 5, line 2 figures 6,7 -----	2

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/PL 01/00063

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4674211	A	23-06-1987	NONE	
US 4358754	A	09-11-1982	NONE	
US 5523930	A	04-06-1996	US 5282117 A	25-01-1994
FR 2538505	A	29-06-1984	FR 2538505 A1	29-06-1984
US 2529713	A	14-11-1950	NONE	
EP 0375293	A	27-06-1990	JP 3010285 A	17-01-1991
			JP 2161489 A	21-06-1990
			EP 0375293 A2	27-06-1990